

REMARKS/DISCUSSION OF ISSUES

By this Amendment, Applicants amend claims 1 and 5 and add new claims 6-15. Accordingly, claims 1-15 are pending in the application.

Reexamination and reconsideration are respectfully requested in view of the following Remarks.

35 U.S.C. § 101

By this Amendment, Applicants amend claim 5 to recite a computer readable medium encoded with a computer program executable by a control unit of an image processing arrangement.

Applicants respectfully submit that claim 5 recites a useful manufacture and therefore clearly satisfies the requirements of 35 U.S.C. § 101.

Accordingly, Applicants respectfully request that the rejection of claim 5 under 35 U.S.C. § 101 be withdrawn.

35 U.S.C. § 103

The Office Action rejects claims 1-5 under 35 U.S.C. § 103 over Applicants' Admitted Prior Art ("AAPA") in view of O'Donnell et al. U.S. Patent 6,201,543 ("O'Donnell").

Applicants respectfully traverse those rejections for at least the following reasons.

Claim 1

Among other things, the method of claim 1 includes manual displacement of nodes, and re-calculation of the nodes of the model (M) in weighted consideration of the nodes that have been displaced manually.

The Office Action admits that the AAPA does not disclose re-calculation of the nodes of the model (M) in weighted consideration of the nodes that have been displaced manually.

However, the Office Action states that "*O'Donnell teaches that re-calculation of the nodes in weighted consideration of the nodes is well known in the art,*" citing

O'Donnell at col. 4, lines 30-43

Applicants respectfully submit that no combination of the AAPA with O'Donnell's teachings would ever produce the method of claim 1.

O'Donnell describes an approach to scaling the forces that are applied to **each of a model's nodes** by the data points, so that the combined forces on the node will not push it past the weighted average of the data points acting on it, and so that the force exhibited by outliers will not have too great an influence on the fit.

At the outset, the cited text in O'Donnell does not appear to mention any re-calculation. Furthermore, since O'Donnell does not teach manually repositioning any nodes, it cannot suggest that any calculation should be made in weighted consideration of such non-existent manually repositioned nodes. There is no teaching or suggestion in O'Donnell of any calculation (or, particularly, a re-calculation) that takes any **"consideration of nodes that have been displaced manually."**

Accordingly, for at least these reasons, Applicants respectfully submit that claim 1 is patentable over the cited art.

Claims 2 and 3

Claims 2 and 3 depend from claim 1 and are deemed patentable over the cited art for at least the reason set forth above with respect to claim 1, and for the following additional reasons.

Claim 2

Among other things, the method of claim 2 includes determination of a candidate point for each sub-surface defined by meshes of the model, each candidate point being situated on a normal to the sub-surface, and assignment of a weighting factor to each node that has been displaced, the weighting factor being larger the smaller distance between the displaced node and a boundary surface of the structure to be segmented.

The Office Action does not really even bother to assert that the references teach this. Instead, the Office Action merely states that O'Donnell teaches that its scale factor is a function of an element's edge length. Actually, O'Donnell does not even teach this – instead it teaches that “[o]ur **smoothing force** on a node *j*, for

example, is a function in the change in the element edge lengths."

But of course, in any event this is not even what is claimed. Where are O'Donnell's teachings on determination of a candidate point for each sub-surface defined by meshes of the model? Where are O'Donnell's teachings on the weighting factor being larger the smaller distance between the displaced node (which, of course, do not even exist in O'Donnell) and a boundary surface of the structure to be segmented? Applicants respectfully submit that no such teachings exist.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 2 is clearly patentable over the cited art.

Claim 3

Among other things, the method of claim 3 includes minimizing a weighted sum of external energy, internal energy and an energy that takes into account the manually displaced nodes.

The Office Action does not really even bother to assert that the references teach this. Instead, the Office Action merely states that "*the scale factor is calculated based on the the (sic) stable of (sic) the object structure or at equilibrium point of the minimized energy.*" At the outset, this sentence is so structurally and grammatically flawed as to be unintelligible and could hardly be said to fairly inform Applicants of the reasoning behind the rejection, such as it may be.

But of course, in any event this is not even what is claimed. Where are O'Donnell's teachings on calculating a weighted sum of different energies? Where are O'Donnell's teachings on an energy that takes into account the manually displaced nodes (which, of course, do not even exist in O'Donnell)? Applicants respectfully submit that no such teachings exist.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 3 is clearly patentable over the cited art.

Claims 4 and 5

Like claim 1, claims 4 and 5 also recite manual displacement of nodes, and re-calculation of the nodes of the model (M) in weighted consideration of the nodes that have been displaced manually and are deemed patentable for at least the reasons

set forth above with respect to claim 1.

NEW CLAIMS 6-15

New claims 6-15 depend variously from claims 1, 4 and 5 and are deemed patentable over the cited art for at least the reasons set forth above with respect to claims 1, 4 and 5 and for the various novel features recited specifically therein.

CONCLUSION

In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 1-15 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

Respectfully submitted,

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